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NUTRITION IN AFRICA IN A GLOBAL ECONOMY: PERSPECTIVES CHALLENGES AND OPPORTUNITIES

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ABSTRACT This paper provides an overview of the nutritional situation in Africa and discusses briefly some of the factors that influence nutritional status of the different groups of the population. Malnutrition in Africa is increasing due to various factors, some of which involve the changing global economic policies. Perspectives of globalisation in relation to nutrition in Africa and the opportunities and challenges faced by nutritionists and relevant workers are presented. Globalisation is affecting food and diseases patterns in Africa hence changing the scenario of the nutrition problems in Africa. Africa is now facing a double burden of having to deal with traditional under-nutrition and emerging over-nutrition in the ailing economies characterised by poor physical and information technology infrastructure, unskilled and unmotivated workers and increasing poverty. Therefore, Africa has a long way to go to be able to participate in the global economy.

Key Words: Nutrition; Malnutrition; Economy; Under-nutrition; Over-nutrition.

GENERAL INTRODUCTION

I. Nutrition Situation in Africa

The nutritional situation in Africa is characterised by high rates of malnutrition. Malnutrition is a term that is used to describe a number of diseases related to deficiency or excess intake of one or more nutrients. Each disease is characterised by cellular imbalance between the supply of nutrients and demand for them by the body to ensure growth, maintenance and specific functions (Gopalan, 1992; FAO, 1995; King & Burgess, 1996).

Malnutrition in its various forms exists and persists in all countries of Africa. However, the extent tends to vary depending on the level of development of the country. For example, the type of malnutrition that exists in Seychelles and Mauritius is that of obesity and associated diseases. This is because the per capita income, a proxy indicator of nutritional situation, is high in these countries, suggesting that there is a strong link between the strength of the economy of a country and the well-being of the people (Fig. 1). Figure 1 shows the negative correlation between GNP and various indicators of nutritional status.

Most of the countries in Africa have low GNP, and high prevalence of malnutrition compared to countries, with high GNP. This is a clear indication that the eco-

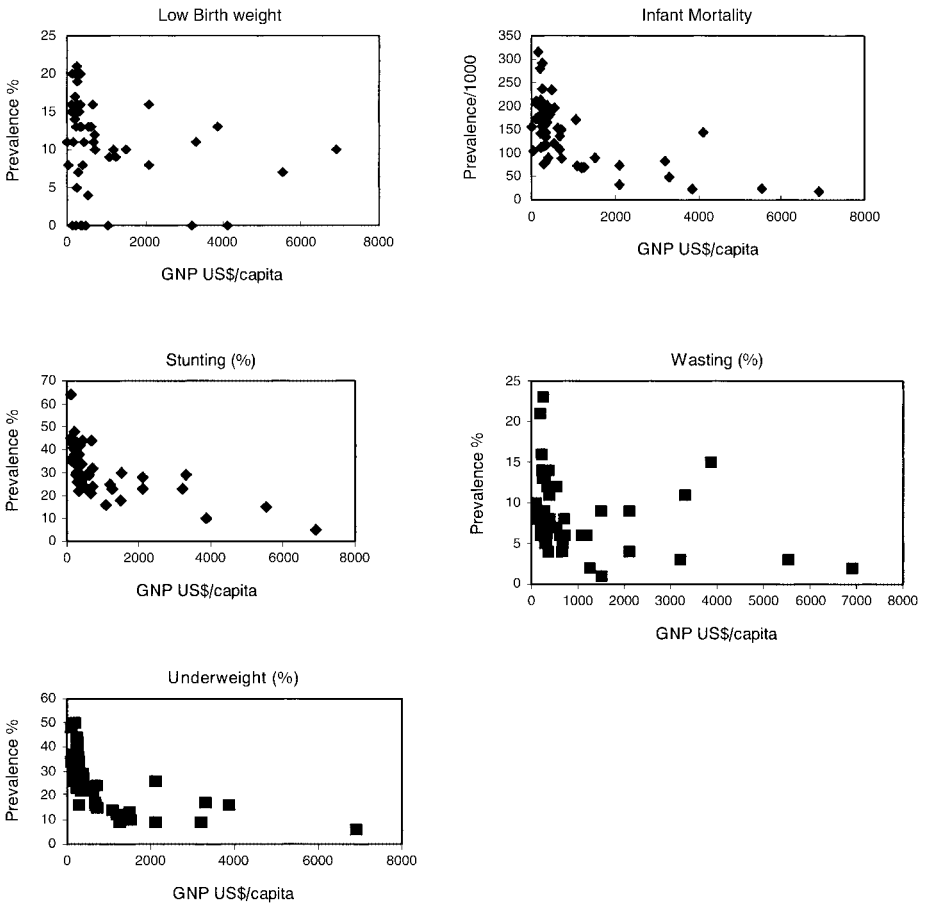

Fig. 1. Correlation between GNP and Various Indicators of Nutritional Status.
Source: UNICEF (2000). The State of the World's Children.

nomic strength of a country influences the nutritional status of its people.

The most common nutritional problems affecting a large population in Africa are protein energy deficiency (PED), iron deficiency anaemia (IDA), iodine deficiency disorders (IDD) and vitamin A deficiency (VAD) (UNICEF, 1996; WHO, 1999). Some other nutritional problems that affect a small section of the population but are increasing at an alarming rate are obesity and its associated diseases such as cardiovascular diseases, cancer, and diabetes (WHO, 1999).

II. Inter Uterine Growth Retardation

Malnutrition affects all age groups from foetal state to adulthood. Intrauterine growth retardation (IUGR) is one of the major public health problems in Africa. The incidence of IUGR in Africa is 26.3% (n=554, 000). This means that weight of 26 % of the new-born babies is below 2500 gm (WHO, 1998). High rate of IUGR sug-

gests high risk of malnutrition and morbidity among women of childbearing age. It is also an indicator of high risk of malnutrition, morbidity and mortality for the newborn. This means unachieved human potential, and therefore has implication for socio-economic development of a nation.

III. Protein Energy Deficiency (PED)

PED continues to be the major nutritional problem in Africa. The actual number of malnourished children has increased world wide and 25.6% is found in Africa. In 1975, the prevalence of PED measured as underweight was 30.4%; in 1980, 26.2%; in 1990, it increased to 27.3%; and in 1995, 27.9% (Table 1). In 2000, it was 28.5% against the target level of 13.7%, indicating that PED will continue to be a burden in Africa for a long period. The proportion of chronically undernourished children has risen by 5% from 38 to 43% in Sub-Saharan Africa since 1970. In 1975-1990, under-nutrition in children below five years of age dropped and has been increasing at a slow rate since then. For other regions of the developing world, for example, Asia, the prevalence of underweight children has dropped by 57% from 1980 to 2000.

However, the absolute numbers of undernourished children have been increasing due to increased younger population. Therefore, it is also important to look at the absolute numbers when considering progress made in reducing protein energy under-nutrition or deficiency in Africa, because the percentages only may sometimes be misleading as it has shown in this analysis.

Table 1. The Proportion and the Number of Undernourished Children 0-5 Years of Age in Africa.

Year	% Underweight	N x 1000
1975	30.4	22.9
1990	27.3	31.6
1995	27.9	34.8
2000	28.5	33.3

Source: WHO Global Database on Child Growth & Malnutrition (1995; 1999)

The prevalence of stunting is also high in Africa. The highest rates are found in Eastern Africa where about more than half of the children suffer from some degree of growth retardation. The trend of nutritional status of children in Africa is alarming because the number of children who are stunted has been increasing. Currently, the average stunting rate stands at 28.5%, ranging between 5% for Seychelles and 64% for Ethiopia (UNICEF, 1999).

IV. Iodine Deficiency Disorders (IDD)

IDD are still major public health problems in Africa. The goal adopted by the International Conference on Nutrition in 1992 was virtual elimination of IDD by year 2000 (FAO/WHO, 1992). Despite efforts to address the problem such as universal salt iodination and other measures, iodine deficiency disorders are still a major problem in Africa. Currently, the percentage of the population affected by

IDD, measured as total goitre rate is 20%. This means that 143,576,600 out of 717,883,000 people in Africa are affected by IDD (The previous estimates of at risk population were based on total goitre rates prevalence of 210% but now the cut-off of 5% has been adopted (WHO/UNICEF/ICCIDD, 1993). The consequence is reduced intellectual ability leading to poor school performance and impaired work capacity. People who are affected by IDD are mentally slower, less energetic and it is more difficulty to motivate them (King & Burgess, 1993). IDD is one of the contributing factors to poor socio-economic development of the affected areas, considering that human labour is still one of the important factors for production in Africa.

V. Vitamin A Deficiency (VAD)

VAD is a public health problem in 96 countries (WHO, 1999). Africa has the highest prevalence of clinical VAD. About 1,080,000 people are affected by VAD. This represents about 0.15% of the total population of Africa. VAD cause severe visual impairment and blindness. It is estimated that about 250,000 to 500,000 VAD children world-wide become blind every year (WHO, 1998), and about half of them die within a year of becoming blind. VAD also increases the risk of severe illness and death from common childhood infections and diseases. It is a loss of potential human capital for African countries where human capital is still very important for production. The World Summit for Children in 1990, the International Conference on Nutrition in 1992 and the World Food Summit in 1997 adopted as a goal the elimination of VAD by the year 2000. Despite progress made in combating the problem by food (margarine, sugar, tea) fortification and distribution of vitamin A supplements in national immunisation programmes, the region is still faced with high prevalence of VAD. This is an indication that there could be other factors contributing to the problem of VAD. For example, measures to improve production, access and utilisation of vitamin A rich foods are still limited in most African countries (FAO, 1995). Therefore much more efforts must be put in this area to improve consumption of vi-tamin A rich foods.

VI. Iron Deficiency Anaemia (IDA)

IDA decreases individual potential, and has adverse effects on learning, productivity and earnings (UNICEF, 1996). It reduces work capacity and physical activity because of the reduced supply of oxygen to tissues. Anaemia is among the major causes of childhood morbidity and mortality and impaired psychomotor development and increases hazards associated with complications of pregnancy, premature birth and low birth weight (Kavishe, 1993; FAO, 1995; Msolla & Kinabo, 1997; WHO, 1999).

The prevalence of IDA in Africa is 42% in children between 0 and 4 years old (UN/ACC/SCN, 1991), and more than 50% in pregnant women (De Mayer, 1989; WHO, 1992; WHO, 1999). There has been little progress over the last two decades to reduce the prevalence of IDA. This means that the prevalence of IDA is as high as it has always been and probably much higher especially now with the problem of HIV/AIDS, which tend to attack the immune system of the body and therefore affect

the volume as well as the concentration of haemoglobin in the blood.

VII. Overweight and Obesity

The prevalence of overweight is very low in Africa compared with other regions, but the problem is significant. About 2.8 million (2.7%) children and 3.9 million (1.5%) adults are overweight (WHO, 1999). Obesity is one of the key factors for a range of non-communicable diseases, such as cardiovascular disease, hypertension and stroke, non-insulin dependent diabetes mellitus some forms of cancer, gastro-intestinal, liver diseases and gall-bladder disease. The effect of these diseases in Africa is the significant unbearable additional financial cost on the health systems (Brundtland, 1999). As a result, deaths due to malnutrition are much higher in Africa than in other regions due to poor resources available to the health systems.

FACTORS INFLUENCING NUTRITIONAL STATUS

There are multitudes of factors that influence the nutritional status. They range from factors that affect the household economy to those affecting the national and international economies. However, it should be appreciated that all factors that affect the national as well as the international economy eventually will affect the household economy and therefore the amount of food and services that can be accessed by the household members.

One of the factors that influence nutrition is disease. African countries as mentioned earlier face double burden of diseases, such as respiratory, diarrhoea and perinatal conditions. Non-communicable diseases are increasing due to an increasing aged population and change in food pattern and lifestyle. Non-communicable diseases are more common in the older generation but they are also increasingly been observed in the young generation (WHO, 1999). Increasing non-communicable diseases tend to alter the range of problems that the health systems in Africa have to address. The burden of disease is compounded by malnutrition, which is still the leading risk factor followed by poor water and sanitation and unsafe sexual behaviour leading to HIV/AIDS. HIV/AIDS has increased mortality of young adults in sub-Saharan Africa (Brundtland, 1999). Girls and young women are more affected than boys and young men. A study in Kenya showed that 22% of the girls were infected against 4% for boys, similarly in Ethiopia, 35.4% of young females were HIV positive compared to 10.7% for young men. In 1998, about 70% of all new infections occurred in Sub-Saharan Africa (Irving, 1999). AIDS orphans are becoming an overwhelming burden on both traditional and formal support mechanisms. And all the gains in life expectancy since the mid-20th century will soon be wiped out (World Bank, 2001). The spread of HIV/AIDS is impoverishing individuals, families and communities in the whole continent. This negatively affects the proportion of economically active population who could contribute significantly to the development of the region.

Developing countries (Africa representing the highest proportion) carries 90% of the disease burden, yet benefit from only 10% of the resources allocated to health

(WHO, 1999). It is evident that the poor households spend a higher proportion of their income for health services, in nations where the majority survive on one US dollar per day. Obviously this deepens the poverty problem, especially when a family member suffers from a major illness such as tuberculosis and AIDS. The situations in most developing countries have become worse when they were forced to cut budgets for social services, downsize the public sector, and at the same time introduce policies of cost-sharing and private medical services. These policies were too suddenly implemented in under-developed economies. Consequently, the achievement of universal coverage for health services as stipulated in the Alma-Alta declaration in 1971 suddenly turned into a mere dream. For example, between 1972 and 1988, central governments, expenditure on health declined from 5.5 to 2.8% (World Bank, 2001). Hence the rise in malnutrition observed in Africa is partly due to budget allocation. This leads to loss of productivity and undermines the potential for economic growth and development.

Under globalisation, private industries and other transnational companies acquire a global status in investment and financial transactions. But private industries the world-over have not contributed significantly to reducing mortality and morbidity of the African region (WHO, 1999). In addition, a plethora of policies emerging from the World Bank (WB), International Monetary Fund (IMF) and Organisation of Economic Community Development (OECD) countries overburden the developing countries' governments. Consequently, the public health systems are ill-equipped to cope with present demands of the double burden, because governments and development agencies have all too often neglected public sectors leading to poor services.

Other factors that influence nutrition include food insecurity due to poor food production and poor water and sanitation.

I. Globalisation and Food Insecurity

The majority of countries in sub-Saharan Africa have undertaken reforms to liberalise both external and domestic markets across a wide range of sectors, including agriculture. Trade and marketing liberalisation measures are designed to increase economic efficiency, thus promoting growth and raising welfare. Market liberalisation is associated with a reduction in government intervention in agricultural input and output markets. This includes replacement of direct state or parastatal participation in agricultural input and output markets by private/commercial activity, removal of control of prices and subsidies. These measures were expected to remove previous market distortions that were created during the era of state control (such as overvalued exchange rate, inefficient marketing boards and tariffs on imported inputs), introduce new competition into markets and stimulate the growth of new markets (Poulton *et al*., 1999).

Although market liberalisation has increased agricultural production in other continents such as Latin America, in sub-Saharan Africa this has not been the case. Table 2 indicates the growth in production of major crop groups in sub-Saharan Africa between 1980 and 1999. The data indicate that in sub-Saharan Africa growth production of all crop groups except roots and tubers declined, an evidence that liberalisation had no stronger effect on growth as anticipated.

Table 2. Crop Production Growth in Sub-Saharan Africa and Latin America (1980-1999) (% p.a.).

Crop	Sub-Saharan Africa		Central America		South America	
	1980-89	1990-99	1980-89	1990-99	1980-89	1990-99
Cereals	4.2	2.8	0.5	1.0	2.6	3.9
Pulses	2.6	3.2	−2.5	1.0	1.3	2.5
Roots+Tubers	3.7	3.9	1.7	2.0	1.0	0.2
Vegetables	3.2	2.0	4.9	2.5	2.2	2.9
Sugar	2.0	0.7	1.7	3.6	4.4	2.6
Bananas	1.8	0.7	1.4	−0.3	2.3	1.6
Assorted cash crops	2.9	2.4	−2.3	0.1	2.1	−1.1

Source: FAO Statistics (FAO, 1998)

The implication for such a trend is that the per capita food needs are never attained. Various factors debilitate against sustainable agricultural productivity in Africa, among them are factors related to macro-economic policies (World Bank, 1998; 1999). For example, implementation of the structural adjustment programme, which necessitated removal of all agricultural production incentives, created by African governments, made production of food crops more costly. Consequently, food production declined leading to food insecurity and malnutrition. The 1990's nutritional situation has been characterised by rapid decline in the food security and nutritional situation. This is because the poorest segment of the society has not been reached by liberalisation policies.

Market liberalisation has also created an imbalance in the labour force between rural and urban areas. Young and able-bodied men and women have migrated from the rural areas to urban areas to engage in petty business, creating labour deficits in the rural areas. This is also one of the contributing factors to declined agricultural productivity.

Due to stringent tariffs set on traditional agricultural cash crops such as coffee, tea, and cotton, income from sale of these crops has also declined, leading to low income for farmers, low purchasing power and poor economic access to food. As a result this has led to increased incidences of malnutrition.

What chances does Africa hold in a global economy under such a situation?

GLOBALISATION AND AFRICA

I. What is Globalisation?

Globalisation refers to an interpretation of a societal process. It is a complex process that involves political, economic and socio-cultural changes across the globe (Lubbers & Koorevaar, 1999). It should be noted however, that globalisation is not a completely new phenomenon. It has been there since the age of exploration as people moved from one continent to another in search of life and commodities. This is evidenced in change in European diets as a result of exploration (Washington, 1996), as new foods were being introduced in Europe from all over the world. Therefore the world has always been operating in a global economy in terms of trade (imports and exports), exchange of goods and services and the influence of

socialist and capitalist blocks all over the world. At the end of the Second World War the world was fragmented and divided into a number of poorly integrated and non-integrated groups. Tariffs, quotas and other barriers to commerce were high; control on capital and currency movements were stringent and exchange rates were unresponsive to market forces (Tobin, 2000). Therefore there were clear boundaries with sovereign states and distinct national economies. Globalisation is therefore manifested in a shift from a world of distinct national economies to a global economy in which production is internationalised and financial capital flows freely and instantly between countries (Tobin, 2000; Lubbers & Koorevaar, 1999; Stiglitz, 2000). It has been argued that globalisation is "a process in which geographical distance becomes a factor of diminishing importance in the establishment and maintenance of cross-border economic, political and socio-cultural relations'' (Lubbers & Koorevaar, 1999). As a result there is increased global interest in politics, economics, trans-national and worldwide companies and international organisations than ever before. The collapse and integration of the two political and economic blocks and several other economies evidence this.

Features of globalisation include shift from distinct national economies to a global economy, internationalised production through trans-national and worldwide companies, free and instant financial capital flows between countries, multinational organisations and companies with vast economic power over states and therefore states' relative loss of control and power to manage their national affairs. Traditional domestic policies for education, taxation, social protection, economic regulation and labour legislation are now dealt with on an international level. This implies that domestic policies must therefore be consistent or competitive with trends in main trading partners. Rules for economic activities are increasingly being defined in the international framework of the World Trade Organisation (WTO), International Monetary Fund (IMF), World Bank (WB), Organisation of Economic Community Development (OECD), the G7 Summits and regional trading blocks such as NAFTA. Improved telecommunications and development of electronic communications network such as the Internet has helped to overcome the barriers of physical distance.

II. Globalisation and Prospects for Africa

What does Africa need to exist in the global economy?

Functioning in a global economy requires a revamping of skills and competence of the people in all sectors and professions. It has been observed that knowledge about international affairs, cross-cultural sensitivities and foreign language skills are important tools in understanding how the global economy functions or operates in relation to one's field of specialisation and for international negotiations (OECD, 1996). In nutrition, this is crucial because the global policies and economy influence accessibility of the individuals to food and health services and therefore the nutritional well-being and competence of the populations especially that of the economies in African countries. Knowledge is also important for designing nutritional intervention programmes or strategies that will influence change in nutritional behaviour and practice.

1. Human capital development

For Africa to be able to operate in a global economy it will require governments to invest significantly in human resource development. It is unfortunate that in many countries, especially in Africa, development of skills is sometimes seen as an individual responsibility rather than a corporate responsibility. Consequently, no strategies are in place regarding aspects of skill development even in government institutions (UNESCO, 2000). Skilled labour in Africa especially in the field of nutrition is scarce. The few trained and skilled nutritionists have either migrated (Table 3), work in international organisations, or hold high positions in governments. Over the last 30 years there has been a significant migration of skilled labour from Africa to other continents (Davies, 1995). Table 3 shows the trend from 1960 to 1987. As a result, activities related to nutrition at grass roots level are being done by very few unskilled workers, and therefore contribute very little to improving the nutritional status of the masses in rural areas. This is not surprising that very little has changed in terms of nutritional status of the population since 1980's as the trends above show. Moreover, unemployment is increasing in Africa. Trans-national corporations in developing countries employ less than 1% of the economically active population. Their demand for skilled labour is low and their contribution to employment and to human development is modest (Kraay & Rijkeghem, 1995). This has implication for individuals' development and accessibility to food and other basic services. It is not surprising that prevalence of under-nutrition among young women and men in Africa is increasing. The challenge for African scholars is to learn to be flexible. Education should be seen as a tool for acquisition of skills that would enable a person to fit in the global arena and take up any job (Griffin & Khan, 1992; Badat, 1998). But what are the job prospects for Africans whose knowledge acquisition is slow due partly to malnutrition, and information flow and accessibility is limited by poor and underdeveloped information technology infrastructure?

Table 3. Estimated Brain Drain from Sub-Saharan Africa (1960-1987).

Period	Total migration of highly skilled migrants from Africa	Average per year
1960-75	27,000	1,800
1975-84	40,000	4,400
1974-87	70,000	5,400
1986-90	50,000-60,000	—
1960-87	100,000	—

Source: Haque & Aziz (1998)

Moreover, lack of human development as reflected in inadequate general education, insufficient training and lack of skills, poor nutrition and relatively high incidence of illnesses resulting from poor access to primary health services, make African scholars or graduates less competitive in the global and African job market (UNESCO, 2000; Badat, 1998). Consequently, the job market in Africa is increasingly being taken up by foreigners and more and more workers find their jobs rendered obsolete by imported technology and foreign competition. Non-governmental

organisations (NGOs) have gained strength over some of the state institutions because they are taken more serious by the international organisations and therefore given more resources. State-owned institutions no longer have the ability to compete with NGOs due to limited resources. Consequently, reduced human development expenditure has therefore been accompanied by a rise in urban unemployment and a sharp fall in real wages in non-agricultural activities, a rise in under-nutrition in sub-Saharan Africa and an increase in the number of poor people.

It has been observed that (World Bank, 1991) urban areas will continue to grow at a faster rate than rural areas, and probably at the same rate the rural areas will deteriorate under the influence of globalisation (Elson & Cagatay, 2000). Urban areas are centres of attraction for investment because the infrastructure in terms of roads, telecommunication, the Internet and other basic services exist. It has been shown that investors tend to invest in areas where the basic infrastructure exists, which means that rural areas of Africa where the majority of the people lives will never be developed unless governments make deliberate efforts to improve the infrastructure. The general trend has shown that international and multinational corporations do not usually invest in the development of infrastructure such as roads or railway lines. Lack of investment in the public services implies that provision of the necessary public services such as health, education, water and sanitation will never be achieved. Consequently, diseases and malnutrition will continue to affect a large section of the population in rural Africa.

Globalisation has also increased the income gap between and within countries, between rich and poor, and between rural and urban areas. Evidence from a number of countries in Africa (Gould & Amero-Rayes, 1983) indicates that real wage levels for public sector employees have been declining over long period. This may have been one of the contributory factors to labour migration from African countries. The decline in real wages is also one of the causes of food insecurity especially to people who do not own land and therefore depends on employment for their access to food (Danso, 1995).

2. Information technology transfer

Accessibility to information in Africa is very low (one for every 5,000 people have access to Internet (Raychaudhuri, 1999) particularly in rural areas because not many people have the necessary facilities such as TV, radio, telephone and internet. Although accessibility is increasing in urban areas, it is very slow and only for a small proportion of the population. It is unfortunate that even for those who have access do not have the courtesy to inform others in the language that can be understood either through writing books or in popular media such as radio, newspapers or TV. But one may pose a question by asking: Write books for who?, when the level of literacy in Africa is 62% for males and 42% for females (UNICEF, 1996), or prepare radio and TV programmes when there are only 142 radio sets per 1,000 population and 23 television sets for 1,000 population. Secondary school enrolment is 24% for males and only 21% for females (UNICEF, 1996). Consequently, important nutrition messages cannot reach a wide section of the population. This could be one of the contributing factors to low achievement of nutrition goals in Africa.

Africa has a long way to go to catch up in the global economy, which is charac-

terised by fast-moving information, knowledge and technology. It may even seem out of place to have information technology infrastructure to all corners of the continent when basic necessities such as clean water, health facilities and schools have not been achieved. The achievement of all these depends much on the income generated by the states.

3. National incomes

Socio-economic development and provision of adequate public services depend on the amount of income, which a country is able to generate. Income for most African countries is mainly generated from sale of primary agricultural products to developed countries and through collection of tax. These two contribute to the gross national product (GNP). Gross national product is the monetary value of all goods and services produced in a society in a particular time period. Its rise or fall measures economic activity based on the labour and production output within a country. There is a significant negative correlation between GNP and all indicators of infant nutritional status. The higher the GNP the lower the rate of all indicators related to under-nutrition (Fig. 1).

Agriculture is the main economic activity in Africa. It contributes up to 50% of GNP for most countries and employs more than 60% of the population, except for the few oil-producing and mining countries. The monetary value of the agricultural products as well as the quantity to be sold is determined by market prices decided by the world or global markets, not by producers, and by tariffs set for different crops or products. Tariffs are high both on basic and processed agricultural products, often those of importance to African countries such as coffee, cocoa, oilseeds, vegetables, fruits and nuts (OECD, 1998). Consequently, income from sale of food and basic agricultural products has decreased and affected the GNP. Poor accessibility to markets due to trade barriers, stiff export competition and lack of domestic support are some of the contributing factors to low participation of African countries in the liberalised global economy (OECD, 1998). This has mainly been caused by high concentration of primary commodities in exports and less diversification. Global pattern of trade in primary commodities has grown much more slowly and has accounted for a declining share in world trade. The main causes of such a trend include:

(1) Declining demand of raw materials used in economic activity;
(2) Low income elasticity of demand (mainly for food);
(3) Changes in organisational structure of commodity markets, namely the large presence of trans-national corporations and cartels in production and marketing, transport and distribution of commodities;
(4) Presence of trade barriers against exports from Low Least Developed Countries (LLDCs). It has been estimated that OECD tariffs and subsidies cause annual losses in welfare of almost $20 billion in developing countries (World Bank, 2001).

The implication for all this is decline in real income for producers of agricultural and primary commodities in Africa. In African countries the real per capita incomes have fallen over the past 35 years (World Bank, 2001). Declined income from agricultural products means poor accessibility to goods and services including food for

the majority of people who depend on agriculture for their livelihood. This also means declined GNP and poor provision of basic services by the states (Griffin & Khan, 1992; OECD, 1998). Because many states in Africa have been performing poorly economically as well as socially, the World Bank and the International Monetary Fund have offered rescue programmes and economic reforms. These included: market liberalisation, public enterprise restructuring and privatisation, retail and producer price decontrol, financial sector reforms, tax reforms, civil service reforms and legal reforms. These have concentrated mainly or entirely on cost-cutting measures as part of attempts to deal with fiscal problems and very little on other aspects like productivity and skill development for the civil servants. Primarily the reforms involved retrenchment of civil servants in an attempt to reduce the wage budget (Dia, 1993) but no significant increase in both fiscal and efficiency (Nunberg & Nellis, 1995; Gupta *et.al*., 1998). Consequently, the percent of population employed by the government has declined significantly and the voluntary retirement might have led to more skilled and productive workers to leave the government and move to private organisation (Nunberg & Nellis, 1995).

Despite all these reforms, there is no significant improvement in an index for human capital development in many African countries (Ghura, 1998). Sub-Saharan Africa has actually performed poorly under economic adjustment programmes (Stein, 1999). Benefits of tax payment need to be seen in terms of improved government provision of public services. Availability and accessibility to public service is a proxy indicator to improved human capital development. Lack of significant improvement in human capital in Africa is partly due to some of the budgeted outlays not reaching the intended sections of the population. This is mainly due to weakness in expenditure management process and existence of corruption (Tanzi, 1998). The study by Ghura (1998) has shown that there is a positive correlation between declining corruption, openness and rising human capital development. In nutrition, this may be translated as improved nutritional status of the people.

GLOBALISATION AND NUTRITION IN AFRICA: CHALLENGES AND OPPORTUNITIES

I. Overview

Despite some gains in nutrition improvement in the 1970's and 1980's, the food and nutrition situation in Africa is deteriorating fast (FAO, 1995; WHO, 1999). Malnutrition is on the increase partly due to HIV/AIDS epidemic and the changing global environment in socio, politico and economic relations. The burden of malnutrition is high for the economies of Africa. In summary, the rate of malnutrition is increasing as both under- and over-nutrition: stunting 48%, underweight 60%, and micronutrient malnutrition 40% (UNICEF, 1999; UN/ACC/SCN/IFPRI, 2000). Diet-related non-communicable diseases, such as heart diseases, hypertension, diabetes mellitus, and cancer, are increasing. The traditional infectious diseases, such as malaria, diarrhoea, respiratory infections, and many other new ones, continue to impoverish the already malnourished populations. Household food insecurity is

increasing, due to low agricultural production, and unemployment causing poor access to food. Per capita incomes are declining both from agriculture and non-agriculture activities. Most households in Africa survive on less than one US dollar per day. Globalisation has reduced their job prospects, and encouraged labour mobility of skilled workers, but limited that of unskilled workers. Globalisation has also reduced the capacity of countries to plan their own development, and has increased their dependency on international technical assistance following the brain drain. Share in the world trade has declined implying that income from exports has also fallen. This has been one of the major causes of inadequate provision of public services by the states and low investment in human development. Diseases have increased but not so the ability to address them. Information technology infrastructure is poor, making accessibility to the technology and the information unachievable.

What does all this mean in the context of Africa?

⁎ Increasingly inadequate budgets for governments to address health, education and nutrition.

⁎ Increasingly inadequate household budgets allocated on health services due to the cost sharing policy. Resource-poor households, which cannot afford to pay for the services, resort to alternative traditional medicines. If these prove ineffective, death is an immediate end result. Thus, increased mortality rates in Africa.

⁎ Compromised mental and physical capacity leading to economic productivity loss and poor socio-economic development.

⁎ Poor education of the population, which tend to increase the poverty trench.

Ailing economies of Africa need even more healthy and productive people compared to developed countries where machines can now do most of the heavy manual labour. This can be achieved only if Africa has a more food-and nutritionally secure population.

The importance of good nutrition in human as well as economic development cannot be over-emphasised. Hungry and undernourished populations have less energy to do heavy physical work, children are less attentive in school, and therefore unable to learn and interact in the learning process, which is essential for the understanding and retainment of knowledge. On the other hand diseases of over-nutrition affect the most skilled and experienced individuals and therefore take affected people out of work and resource away from primary health services. Micronutrient deficiency have been estimated (UN/ACC/SCN/IFPRI, 2000) to cause significant losses in gross domestic product (GDP). Although, there are no estimates for Africa, the estimates for other countries can help show the implications, especially if a country has similar conditions as that of Africa. The annual losses of 5% have been estimated for Pakistan. This suggests that improvement in nutrition can increase overall economic growth.

In addition to all these, there is an issue of globalisation, which is creating an additional challenge to nutrition interventions, training, research, and practice in Africa.

Therefore, nutrition in Africa will have to be understood in relation to opportunities and challenges of globalisation. Nutritionists in Africa can no longer afford to be

retrospective. It is important that both retrospective and pragmatic academic approaches are used in dealing with nutrition issues.

Globalisation is influencing Africa and other continents in a number of ways. These include diets, disease, knowledge acquisition, research and mode of service delivery. It is therefore crucial to understand the challenges and opportunity posed by globalisation in these contexts.

II. Globalisation and Dietary Pattern

Globalisation and liberalisation is influencing food habits and dietary patterns in many parts of Africa (and the world in general) especially in urban areas. Globalisation has increased free movement of processed foods and other commodities, such as soft drinks, biscuits, cakes, sweets, including chocolates, and ready-to-eat foods. These have become readily available in the market and consumption of these foods has increased significantly in urban areas of Africa. The dietary intake pattern is now changing rapidly from a traditional diet of high carbohydrate, high fibre to one containing many manufactured, processed and non-traditional foods (Jenkins *et al*., 1998). This trend is accelerated by the increasing urbanisation (Bourne *et al*., 1994). Currently the rate of urbanisation is estimated to be about 8% per annum. It is estimated to reach about 15% by the year 2015 (United Nations DELSA, 1995). Increased urbanisation and changing food habits and lifestyle have created an additional burden of nutrition problems in Africa (Solomons & Gross, 1995). For example, in 1930 there was no incidence of diabetes in Kenya. By late 1970's diabetes had become common. This phenomenon occurs independent of other socio-economic aspects (Popkin, 1993; 1994; Drewnowski & Popkin, 1997).

Nutritionists in Africa have to deal with three different types of problems. First is the rural under-nutrition, which is caused by consumption of traditional diets deficient in energy and micronutrients. However, problems of over-nutrition are also observed in rural communities. The second group is among the middle and low-income urban people who are striving to consume the new foods instead of the traditional foods but cannot afford them due to poor affordability. This results in serious dietary deficiency conditions. The third group comprises the urban elite (executives, politicians and business people) that has changed its lifestyle and food habits completely, as they no longer consume the indigenous foods. They have an increased consumption of highly refined energy-dense foods (fat and sugar), meat and alcohol (Drewnowski & Popkin, 1997; Whiting & Mackenzie, 1998). The analysis by Drewnowski & Popkin (1997) showed that there was a major shift in the structure of the global diet. The global availability of cheap vegetable oils and fats has resulted in increased fat consumption among low-income countries. As a result, the problems of dietary diseases occur at lower levels of the GNP than previously. This is also accelerated by urbanisation. Those working to improve the nutritional well-being of the poor in developing countries are now confronted with an additional challenge on how to deal with the emerging crisis of excess nutrition and chronic dietary diseases without drawing much resources from the traditional problem of under-nutrition and poverty. The challenge to the nutrition profession is to promote a diet that is suitable for all populations rather than developing special diets for mal-

nourished and poor populations and other diets for higher income groups. It should be noted that the ultimate goal is to have adequate nutritional status for all populations irrespective of their economic status.

Of equal importance is the challenge of the emerging foods; genetically modified foods. Currently there are 12-15 major genetically modified crops produced worldwide (Skerrit, 2000). Genetic modification has a number of useful transformations such as insect resistance, and transfer of desirable quality genes, agronomic performance and for nutritional augmentation. Modification for nutritional purposes has helped to improve the nutrient content of certain foods such as vitamin A in maize (Skerrit, 2000). Despite the potential benefits of genetic modification of crops, it is not yet well established as to the safety of these foods. Moreover, genetic modification has been applied on temperate crops and very little on the indigenous crops of Africa such as yams, and sorghum. Recently sweet potato was engineered to improve the quality of protein. Some work is going on to modify cassava (Skerrit, 2000). More research is needed to establish the safety as well as the availability of the modified nutrients in the body.

In addition, concern has also been raised with regard to the possibility of the multinational companies dominating the technology, consequently displacing African peasants and increasing unemployment. Because of the expensive technology involved to produce these foods, the prices of the modified foods are high and therefore not many people in Africa will be able to access them. This may contribute and actually worsen the problem of food insecurity and therefore malnutrition.

With increasing importation of convenient foods, which require less time and skill to cook compared to the traditional foods, the traditional staples and side dishes are being abandoned in favour of the new diets containing higher proportion of sugar and vegetable and animal fats (WHO, 1990). However, one opportunity of globalisation and market liberalisation is that it allows diet diversification. It must be accepted that traditional diets of Africa are based on a very limited number of foods and often consists of more starchy roots and coarse grains, less fat and high fibre, and offer little in terms of diversity or variety. This means that these diets supply very little amounts of essential nutrients such as minerals and vitamins, which is one of the major causes of micronutrient deficiencies in these communities. With introduction of foods from other regions of the world, there is a shift from high carbohydrate staple to a more diverse diet ensuring availability of more nutrients even those that are known to be deficient in foods produced from the local soils. Movement of foods from one region to another allows exchange of nutrients between regions and helps to supplement or complement the missing nutrients in the local diets.

This means that the nutrition profession especially in Africa has to quickly adjust to these rapid changes in dietary and malnutrition pattern. There is a need therefore to develop programmes and messages that will address the concern of both undernutrition and over-nutrition.

III. Nutrition Capacity Building

Globalisation offers opportunity for nutritionists in Africa to share ideas and poli

cy strategies in nutrition issues consequently influencing policies for nutrition across national borders and through interest groups. The International Conference on Nutrition (ICN), and other nutrition forums and organisations provide the opportunity to converge and benefit from our diversity (Stiglitz, 1998). In that way the knowledge base is improved. However, this will depend on whether nutritionists in Africa have the capacity or mechanisms that would allow them to participate in international fora and benefit from them. If not, one of the challenges that nutrition capacity building in Africa faces is developing international skills among nutrition workers so that they are able to compete in the global labour market. As indicated above, there are more than 1,000,000 expatriates working in Africa, therefore increasingly more nutrition work in Africa is now carried out by expatriates, NGOs or international organisations whose agenda do not conform to the needs of the majority of people in rural areas. Consequently, people from outside Africa are publishing more and more information on nutrition.

IV. Globalisation and Disease Pattern

As economies become increasingly international, environments degraded and, and more people impoverished, the pace of change of disease pattern increases. Globalisation has increased large-scale movement of goods and people around the globe. This increases the possibility of vectors and non-human carriers of disease being introduced into areas where they never existed previously. One example, although not related to Africa, is that of the reintroduction of cholera to South America in the 1990s thought to have originated from a freighter discharging water from China to Peruvian coastal waters. The water carried the cholera vibrio and it was transmitted to people through consumption of the fish and crustaceans. The incidence of tuberculosis has increased by 18% between 1985 and 1992 in the US alone. Worldwide, in 1991, eight million new tuberculosis cases were reported. One third of the world population is estimated to be carrying the infection. The spread of immune deficiency virus causes many people to succumb to the disease. Its spread is increasing fast in nutritionally compromised populations (WHO, 1999).

Current global policies have also contributed to the spread of diseases by undermining local livelihood and forcing people to migrate in search of work. The migration from rural to urban areas could bring major outbreaks of diseases such as yellow fever into epidemic levels. In Africa the chances are the vector would pick the virus from rural migrants seeking work in the cities setting a stage for major outbreak of yellow fever in addition to malaria, which is still causing havoc in all African countries. Currently, yellow fever is on the increase from a few hundreds in 1940s to estimated 200,000 today (Harvard Working Group, 1999).

In addition to the communicable diseases, the world is also experiencing rapid increase of non-communicable diseases (NCDs). Currently, NCDs account for about 75% of mortality in the developed world and 40% in the developing world (Posner *et al*., 1994). Between 1979 and 1980, the prevalence of chronic diseases such as heart diseases, and diabetes, increased by 50-100% in many regions of Africa (Trowell, 1981; Murray & Lopez, 1997). The rise in NCDs has been associated with marked changes in the lifestyle characteristics of populations, such as diet and other

potentially modifiable behaviours such as smoking, eating, exercise, alcohol, etc. (Dodu, 1988). There is concern also that the shift away from consumption of traditional foods has decreased dietary intakes of some key micronutrients such as calcium and vitamin A.

The biggest challenge facing nutritionists in Africa is how to address the issue of obesity, because obesity is not offered the same support as under-nutrition. There is no enthusiasm in attacking obesity in terms of drawing the attention and sympathy of the public. This is because the society views obesity as a problem of idleness and personal failure and not of public policy. Moreover, there is no stigma against obesity in Africa. Obesity is often viewed as a symbol of beauty and status in Africa (Cassidy, 1991). It has also now increasingly been taken as a sign that someone is free from HIV infection. More often, people do not associate food intake, lack or excess, with occurrence of diseases. The challenge for nutritionists is to come up with approaches and policies that will elicit public response in this issue and make them take necessary action to address the problems.

There is a need for nutritionists in Africa to develop and implement national nutrition policies and integrated intervention programmes for reduction and prevention of chronic dietary disease morbidity and mortality. However, these have to be done in the context of globalisation.

CONCLUSION

Malnutrition in Africa is increasing and this is partly due to global policies, which seem to have effect on peoples' behaviour and practices with regard to access to food, and health facilities, and therefore their nutritional well-being. Globalisation on the one hand is influencing peoples' income and therefore access to the necessary public services. It also influences diets and diseases patterns. This has created additional burden in the health systems of Africa. Nutritionists now have to deal with nutritional problems arising due to under-nutrition and over-nutrition, in a situation of low-skilled manpower and poor information technology infrastructure. However, in areas where the technology is available it offers opportunity for nutritionists to beam nutrition issues to a wide audience and hence can influence peoples' behaviour and practice. Africa has a long way to go to be able to participate in the global economy. To do so it will need to revamp skills and invest significantly in human development including improving the nutritional status of the people who are an essential element for production and productivity in the absence of machines and robots.

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